

## Case 3406

***Belostoma annulipes* Herrich-Schaeffer, 1845 (currently *Lethocerus annulipes*; Insecta, Heteroptera, BELOSTOMATIDAE): proposed conservation of usage of the specific name by designation of a neotype**

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**Abstract.** The purpose of this application, under Article 75.6 of the Code, is to conserve the widely used specific name *Lethocerus annulipes* (Herrich-Schaeffer, 1845) for a common Neotropical giant water bug (family BELOSTOMATIDAE) by setting aside all previous type fixations and designating a neotype.

**Keywords.** Nomenclature; taxonomy; Heteroptera; BELOSTOMATIDAE; *Lethocerus*; *Lethocerus annulipes*; Neotropics; giant water bug.

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1. *Belostoma annulipes* Herrich-Schaeffer, 1845 (currently *Lethocerus annulipes*) is the most common species of the genus in the Neotropical region. It is distributed from central Buenos Aires, Argentina, northwards to Venezuela and Trinidad, and (according to Menke, 1963) Puerto Rico and Hispaniola Island, inhabiting water bodies from sea level up to 1300 m altitude (Perez Goodwyn, 2006).

2. In 1845 Herrich-Schaeffer (p. 28, figs. 803–804) described *Belostoma annulipes* from 'Südamerika'. His brief description stated that it was the largest water bug he had ever seen, with robust femora and three dark rings on the legs, a character from which the name was derived. He included drawings of the dorsal and ventral habitus, but in the drawings there is no trace of any dark ventral stripes. Herrich-Schaeffer also stated that he would describe the species in more detail in a future work. In the next work he published (Herrich-Schaeffer, 1849, p. 33) he synonymized it with *Nepa grandis* Linnaeus (1758, p. 440).

2. Dufour (1863) established two species, *Belostoma ruficeps* (p. 382) and *B. signoreti* (p. 382), the latter having the dark ventral stripes typical of the species that is currently known as *L. annulipes*.

3. Mayr (1868, pp. 185–186) stated that *B. annulipes* was a valid name and that Herrich-Schaeffer had synonymized it incorrectly. He redescribed this species very briefly, and highlighted the character of the rounded projection of the hind tibia. In the same work, he synonymized (pp. 185–186) *B. ruficeps*, *B. distinctum* Dufour, 1863, *B. signoreti* Dufour, 1863, *B. litigiosum* Dufour, 1863 and *B. obscurum* Dufour, 1863 under *B. annulipes* based upon the variation of the colour pattern in Dufour's species. He mentioned a specimen that had 'two dark bands on the venter', but suggested that this variation was intraspecific.

4. In 1871 Mayr published a key by which the species currently identified as *Lethocerus delpontei* De Carlo, 1930 and *Lethocerus melloleitaoui* Carlo, 1933 could be identified as '*Belostoma annulipes*'. In this work the synonymic list of *Belostoma*

*annulipes* includes only Dufour's *Belostoma ruficeps* and *B. signoreti*; the other above names were assigned to other species: *Belostoma distinctum*, under *B. haldemanus* Stål, 1861 (currently *Benacus griseus* (Say, 1832, pp. 428–429) and both *Belostoma litigiosum* and *Belostoma obscurum* under *Belostoma griseum* Stål, 1861 (currently *Lethocerus americanus* (Leidy, 1847, pp. 427–428)).

5. Montandon (1896) considered *B. annulipes* as a species with three rings on its legs, without describing the ventral stripes. His description of *B. annulipes*, though extensive, could fit at least another two different species (*L. delpontei* Carlo, 1930 and *L. medius* Guérin-Méneville, 1837). In the same work (p. 514) he described *B. mayri* 'considered as a variety until more specimens are checked'. According to the description and the examination of the type, this variety is unequivocally *L. annulipes* as presently interpreted, even though Montandon did not describe the dark bands. It is surprising that the specimens deposited in the Naturhistorisches Museum Wien, Austria (NHMW), types of Dufour's *Belostoma ruficeps* and *Belostoma signoreti*, were redetermined by Montandon as '*B. annulipes*', and that he was not able to recognize his own species variety *B. mayri* in them while correctly distinguishing it from *L. medius* or *L. delpontei*.

6. De Carlo (1930) considered all specimens with ventral dark stripes as *Lethocerus annulipes* but he made a comment that showed the confusion current at that time 'Among the revised specimens, I found four males that match very closely with the description of the subspecies Mayr [sic] Montd. 1896, but I do not dare to identify them as such, until I check more specimens'. Cummings (1933) and De Carlo (1938) identified all specimens with ventral stripes as *L. annulipes*.

7. Menke (1962) wrote that the description by Herrich-Schaeffer was insufficient, but he did not make any decision on the taxonomical status. He stated that Herrich-Schaeffer (more precisely the drawing artist) had made a 'lapsus' by omitting the stripes. It seems likely, on the contrary, that the drawings were accurate in that respect, and *L. maximus* De Carlo, 1938 or *L. grandis* was drawn. The longer claws of the fore leg suggest a *L. grandis*.

8. The holotype specimen of *Belostoma annulipes* should be deposited in the Staatssammlung München, together with most of the collection of Herrich-Schaeffer, but there is no belostomatid identified by that author there. Cummings (1933) and Menke (1962) were also unsuccessful in this search of this specimen, so the type material is probably lost. For all the reasons given above, it is presumed that the first valid descriptions of the species are those of *B. ruficeps* and *B. signoreti* of Dufour (1863). The respective holotypes are deposited in the NHMW.

9. Even though this is a case of misidentification, and *B. annulipes* is in fact a synonym of *B. grandis*, the name *Belostoma annulipes* Herrich-Schaeffer, 1845 has been extensively used for over 100 years and a change to *B. ruficeps* would seriously undermine stability. The secretariat holds an additional list of 25 papers, in which the name *Belostoma annulipes* Herrich-Schaeffer, 1845 is used in the accustomed way. In order to maintain prevailing usage it is proposed that all previous type fixations for *Belostoma annulipes* Herrich-Schaeffer, 1845 are set aside and a neotype is designated.

10. A neotype is here proposed, a male, from Argentina, Chaco, Resistencia, with the following 4 labels: 1st: 'CHACO – ARGENTINA, Dep. Resistencia, X-XII-935 J. B. Daguerre'; 2nd: 'Lethocerus [sic] annulipes, Det. De Carlo H.S. MUSEO ARGENTINO DE CIENCIAS NATURALES'; 3rd: '44186'; 4th: 'Descripto'. A

new label is added: *Lethocerus annulipes* (Herrich Schaeffer, 1845), NEOTYPUS, Perez-Goodwyn, 2006. Perez-Goodwyn (2006) already proposed this change.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *annulipes* Herrich-Schaeffer, 1845 as published in the binomen *Belostoma annulipes* and to designate specimen 44186 in the Museo Argentino de Ciencias Naturales as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *annulipes* Herrich-Schaeffer, 1845, as published in the binomen *Belostoma annulipes*, and as defined by the neotype designated in (1) above.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).